

FIG. 1

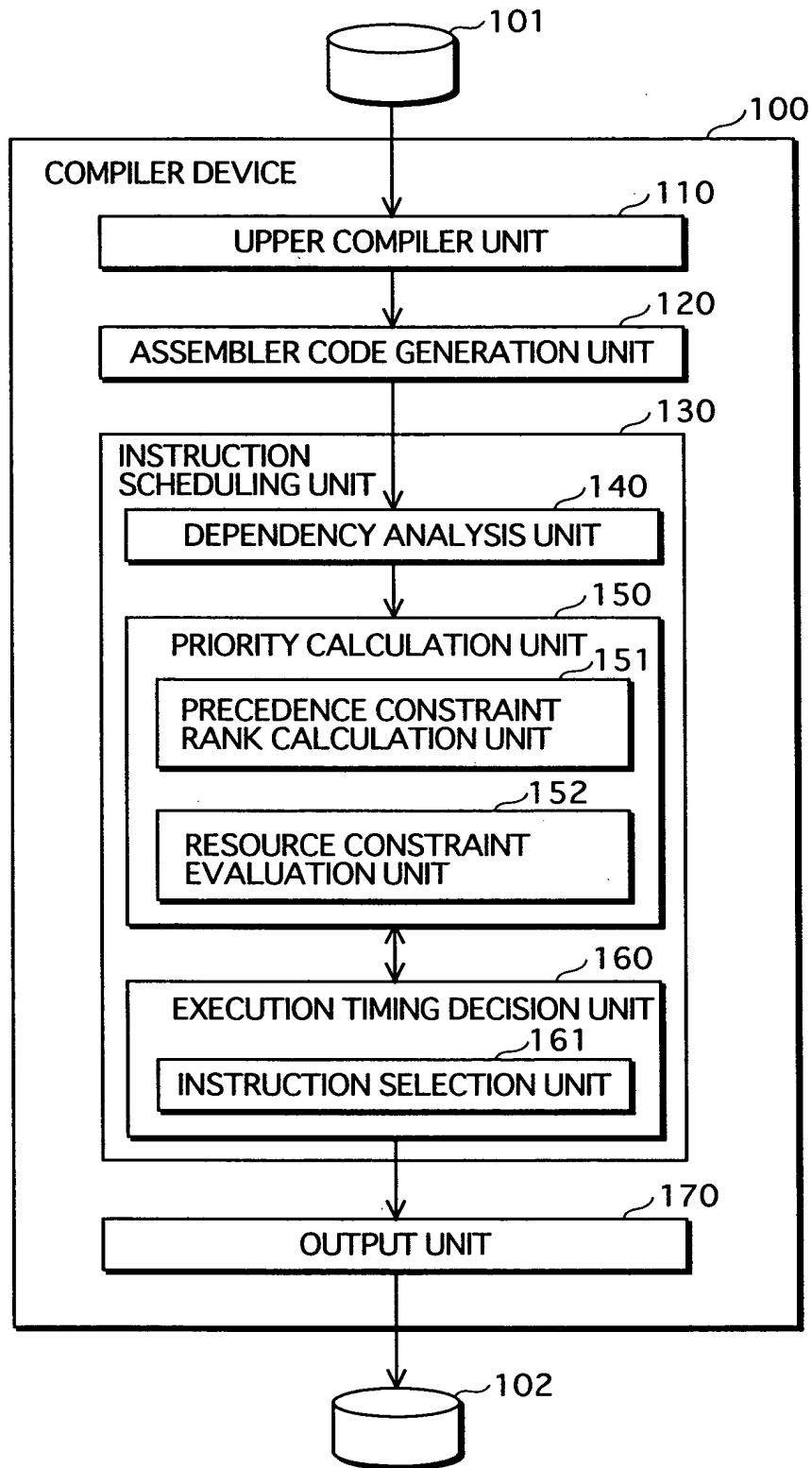


FIG.2

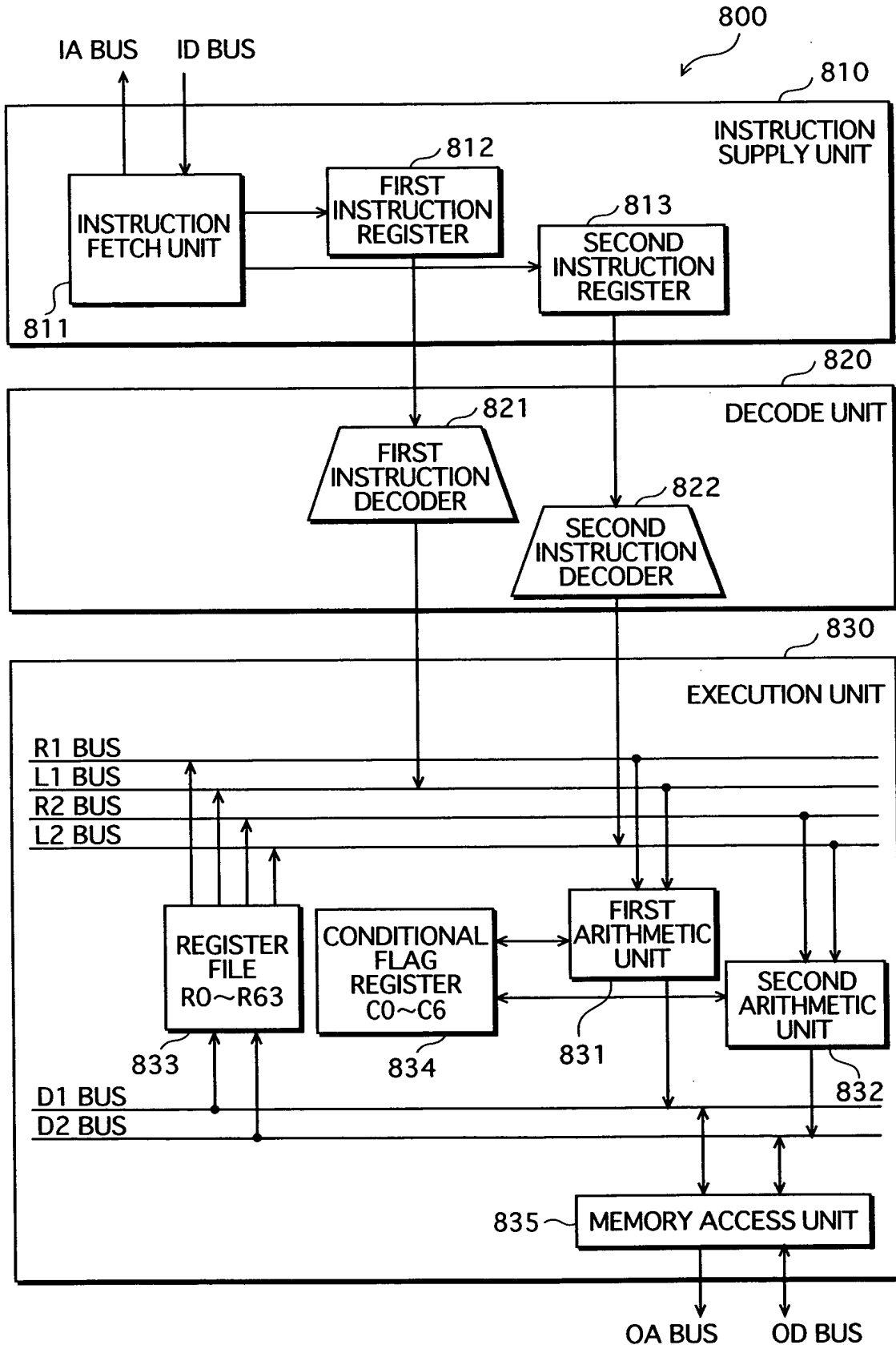


FIG.3

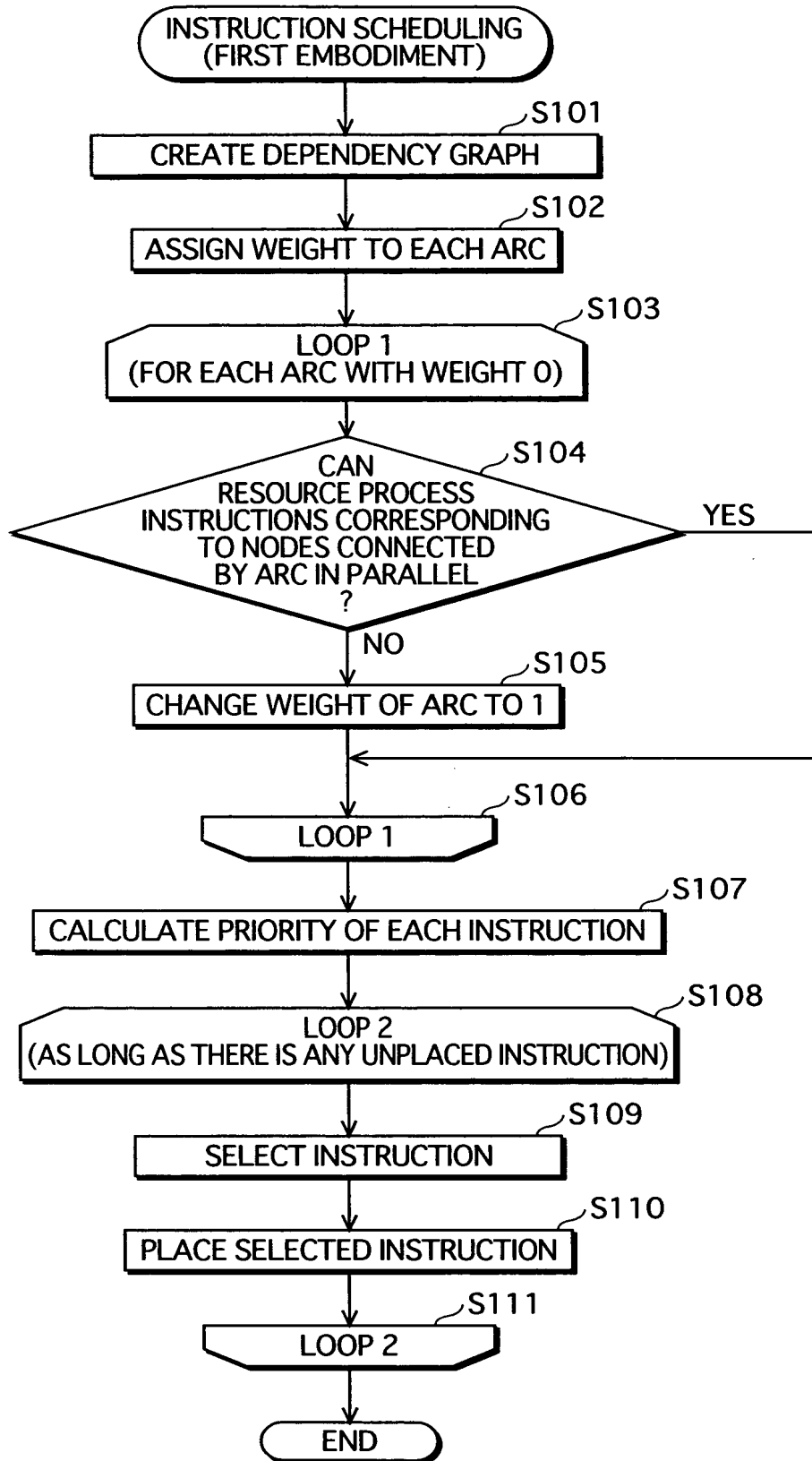


FIG.4

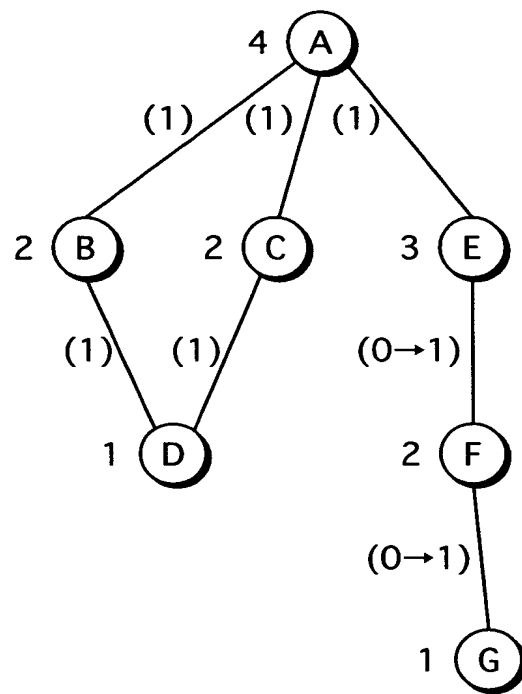
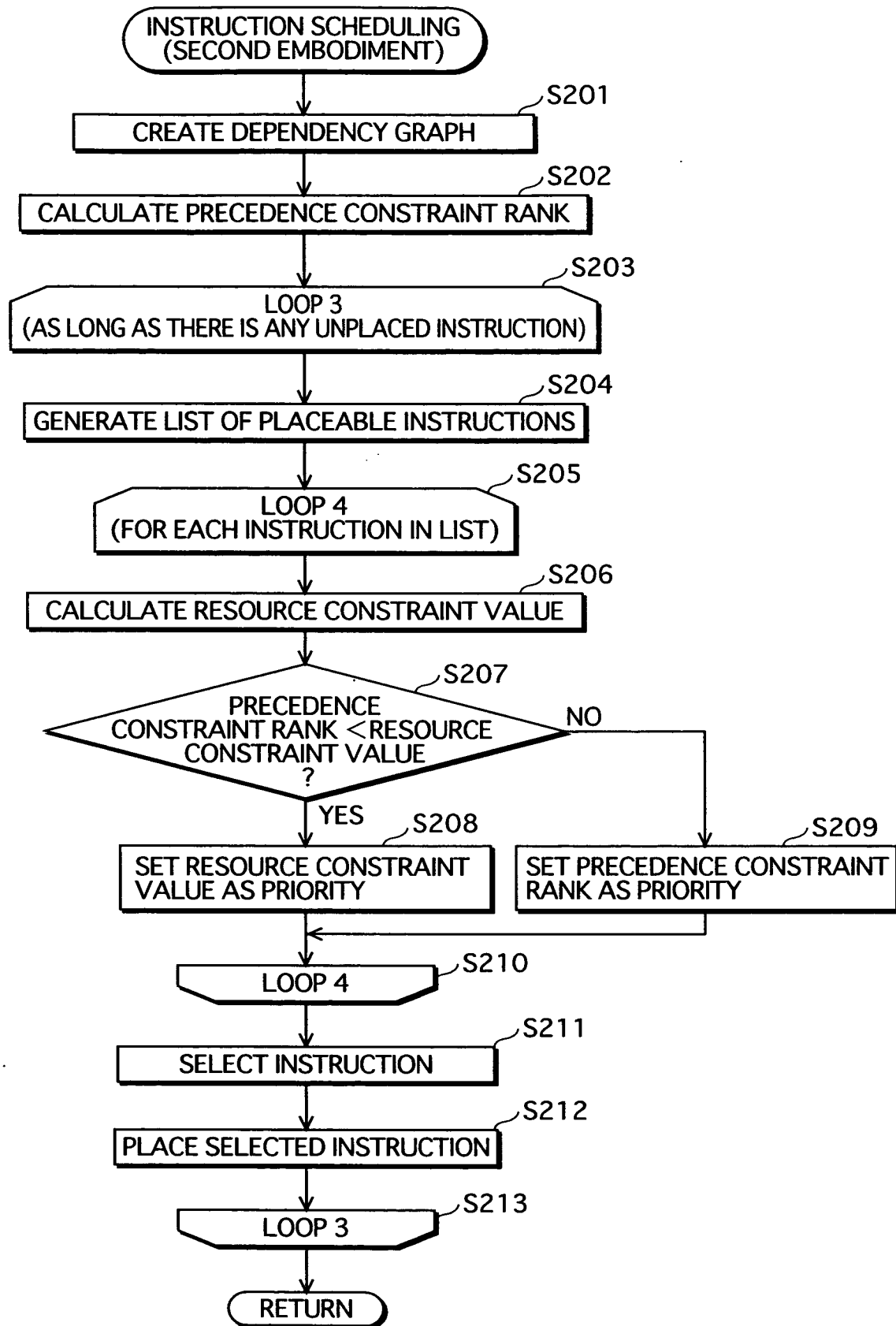


FIG.5

CLOCK CYCLE	INSTRUCTION 1	INSTRUCTION 2
1	ld r0, (r10) ··· ① (FIRST DECISION)	—
2	st (r11), r0 ··· ② (SECOND DECISION)	add r3, r0, r1 ··· ③ (THIRD DECISION)
3	add r4, r0, r2 ··· ④ (FOURTH DECISION)	ld r0, (r12) ··· ⑤ (FIFTH DECISION)
4	or r5, r4, r3 ··· ⑥ (SIXTH DECISION)	ld r0, (r13) ··· ⑦ (SEVENTH DECISION)

FIG.6



INSTRUCTION	RESOURCE	PRECEDENCE CONSTRAINT RANK	FIRST DECISION			SECOND DECISION			THIRD DECISION			FOURTH DECISION		
			PLACEMENT STATE	RESOURCE CONSTRAINT VALUE	PRIORITY	PLACEMENT STATE	RESOURCE CONSTRAINT VALUE	PRIORITY	PLACEMENT STATE	RESOURCE CONSTRAINT VALUE	PRIORITY	PLACEMENT STATE	RESOURCE CONSTRAINT VALUE	PRIORITY
A	M	3	PLACEABLE	4	4	1	-	-	1	-	-	1	-	-
B	A	2	UNPLACED	-	-	PLACEABLE	1.5	2	PLACEABLE	1.5	2	2	-	-
C	A	2	UNPLACED	-	-	PLACEABLE	1.5	2	PLACEABLE	1.5	2	PLACEABLE	1	2
D	A	1	UNPLACED	-	-	UNPLACED	-	-	UNPLACED	-	-	UNPLACED	-	-
E	M	1	UNPLACED	-	-	PLACEABLE	3	3	2	-	-	2	-	-
F	M	1	UNPLACED	-	-	UNPLACED	-	-	PLACEABLE	2	2	PLACEABLE	2	2
G	M	1	UNPLACED	-	-	UNPLACED	-	-	UNPLACED	-	-	UNPLACED	-	-

FIG.8

INSTRUCTION	RESOURCE	PRECEDENCE CONSTRAINT RANK	FIFTH DECISION			SIXTH DECISION			SEVENTH DECISION			PLACEMENT RESULT
			PLACEMENT STATE	RESOURCE CONSTRAINT VALUE	PRIORITY	PLACEMENT STATE	RESOURCE CONSTRAINT VALUE	PRIORITY	PLACEMENT STATE	RESOURCE CONSTRAINT VALUE	PRIORITY	
A	M	3	1	-	-	1	-	-	1	-	-	1
B	A	2	2	-	-	2	-	-	2	-	-	2
C	A	2	3	-	-	3	-	-	3	-	-	3
D	A	1	PLACEABLE	0.5	1	PLACEABLE	0.5	1	4	-	-	4
E	M	1	2	-	-	2	-	-	2	-	-	2
F	M	1	PLACEABLE	2	2	3	-	-	3	-	-	3
G	M	1	UNPLACED	-	-	PLACEABLE	1	1	PLACEABLE	1	1	4

FIG.9

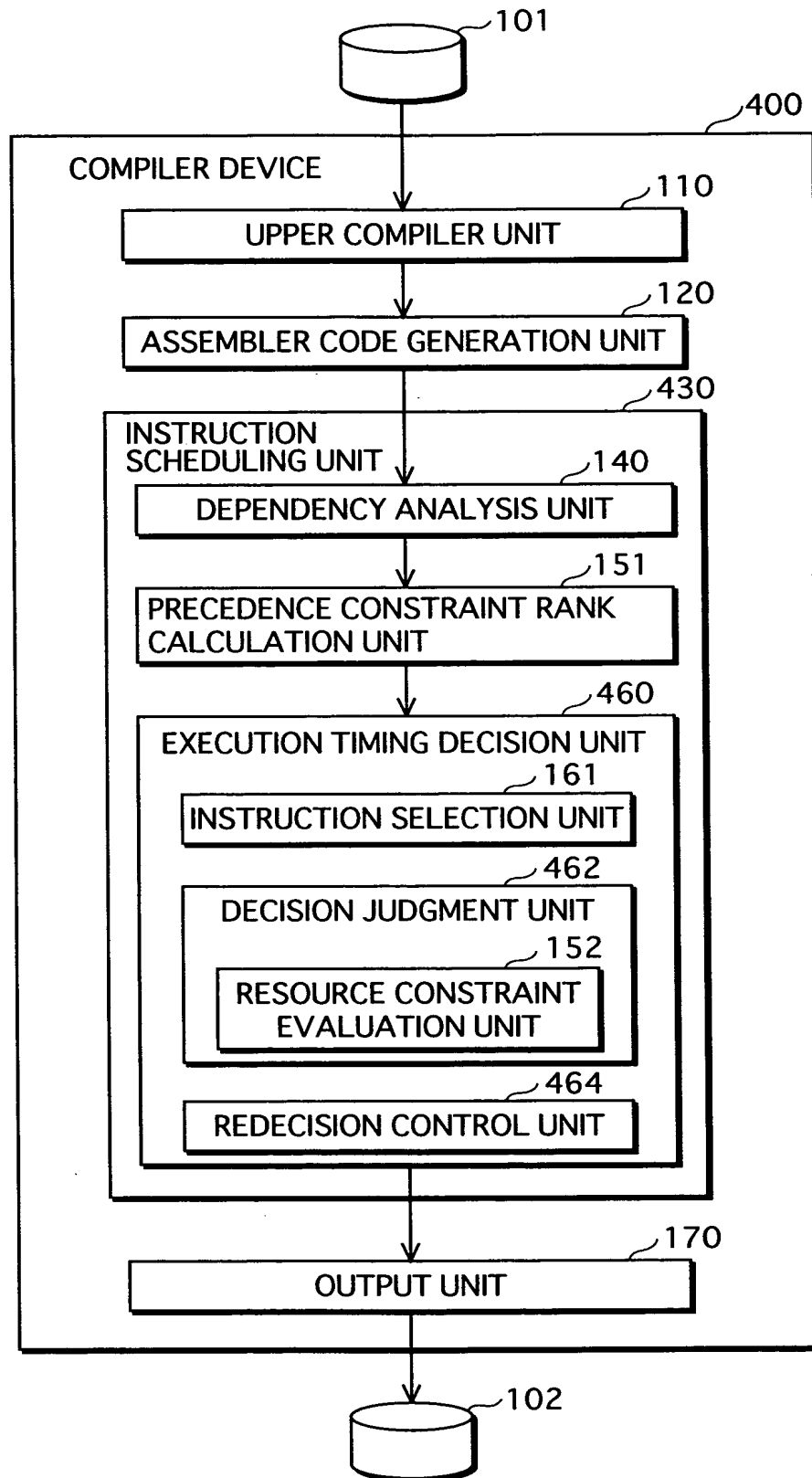


FIG.10

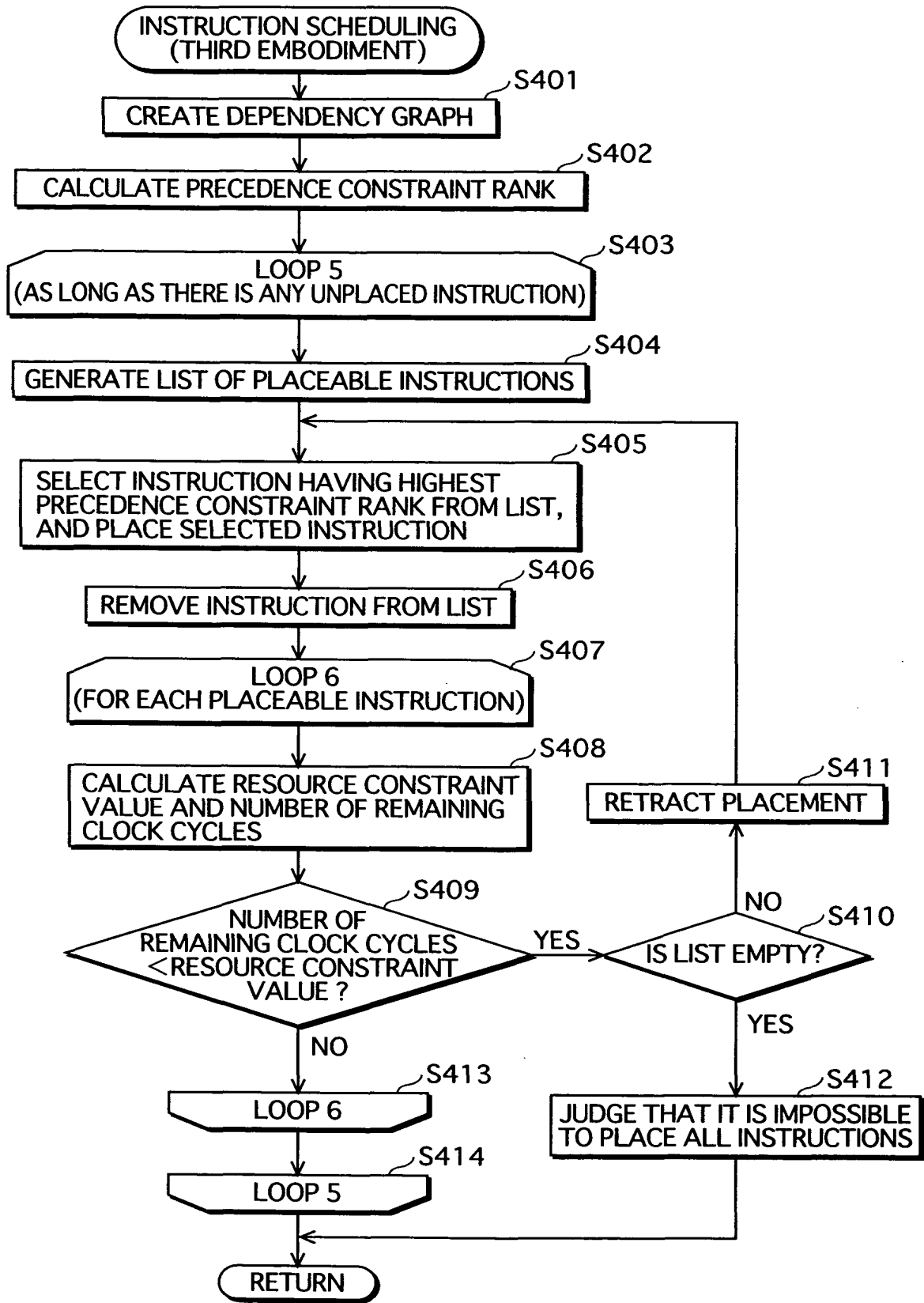


FIG.11

INSTRUCTION	RESOURCE	PRECEDENCE CONSTRAINT RANK	FIRST DECISION			SECOND DECISION			THIRD DECISION			THIRD DECISION (REDECISION)		
			PLACEMENT STATE	NUMBER OF REMAINING CYCLES	RESOURCE CONSTRAINT VALUE	PLACEMENT STATE	NUMBER OF REMAINING CYCLES	RESOURCE CONSTRAINT VALUE	PLACEMENT STATE	NUMBER OF REMAINING CYCLES	RESOURCE CONSTRAINT VALUE	PLACEMENT STATE	NUMBER OF REMAINING CYCLES	RESOURCE CONSTRAINT VALUE
A	M	3	PLACEABLE (1)	-	-	1	-	-	1	-	-	1	-	-
B	A	2	UNPLACED	3	1.5	PLACEABLE (2)	-	-	2	-	-	2	-	-
C	A	2	UNPLACED	3	1.5	PLACEABLE	3	1	PLACEABLE (2)	-	-	PLACEMENT RETRACTED	2	1
D	A	1	UNPLACED	-	-	UNPLACED	-	-	UNPLACED	2	0.5	UNPLACED	-	-
E	M	1	UNPLACED	3	3	PLACEABLE	3	3	PLACEABLE	2	3	PLACEABLE (2)	-	-
F	M	1	UNPLACED	-	-	UNPLACED	-	-	UNPLACED	-	-	UNPLACED	2	2
G	M	1	UNPLACED	-	-	UNPLACED	-	-	UNPLACED	-	-	UNPLACED	-	-

INSTRUCTION	RESOURCE	PRECEDENCE CONSTRAINT RANK	FOURTH DECISION			FIFTH DECISION			SIXTH DECISION			SEVENTH DECISION			PLACEMENT RESULT
			PLACEMENT STATE	NUMBER OF REMAINING CYCLES	RESOURCE CONSTRAINT VALUE	PLACEMENT STATE	NUMBER OF REMAINING CYCLES	RESOURCE CONSTRAINT VALUE	PLACEMENT STATE	NUMBER OF REMAINING CYCLES	RESOURCE CONSTRAINT VALUE	PLACEMENT STATE	NUMBER OF REMAINING CYCLES	RESOURCE CONSTRAINT VALUE	
A	M	3	1	-	-	1	-	-	1	-	-	1	-	-	1
B	A	2	2	-	-	2	-	-	2	-	-	2	-	-	2
C	A	2	PLACEABLE (3)	-	-	3	-	-	3	-	-	3	-	-	3
D	A	1	UNPLACED	1	0.5	PLACEABLE (4)	-	-	4	-	-	4	-	-	4
E	M	1	2	-	-	2	-	-	2	-	-	2	-	-	2
F	M	1	PLACEABLE	2	2	PLACEABLE	2	2	PLACEABLE (3)	-	-	3	-	-	3
G	M	1	UNPLACED	-	-	UNPLACED	-	-	UNPLACED	1	1	PLACEABLE (4)	-	-	4

FIG.12

FIG.13

CLOCK CYCLE	INSTRUCTION 1	INSTRUCTION 2
1	ld r0, (r10) ··· ① (FIRST DECISION)	—
2	add r3, r0, r1 ··· ② (SECOND DECISION)	st (r11), r0 ··· ③ (THIRD DECISION)
3	add r4, r0, r2 ··· ④ (FOURTH DECISION)	ld r0, (r12) ··· ⑤ (SIXTH DECISION)
4	or r5, r4, r3 ··· ⑤ (FIFTH DECISION)	ld r0, (r13) ··· ⑥ (SEVENTH DECISION)

FIG. 14

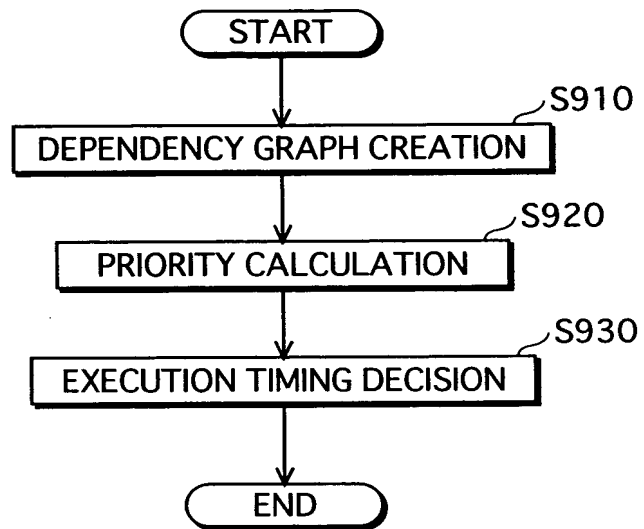


FIG.15

ld	r0, (r10)	. . .	Ⓐ
add	r3, r0, r1	. . .	Ⓑ
add	r4, r0, r2	. . .	Ⓒ
or	r5, r4, r3	. . .	Ⓓ
st	(r11), r0	. . .	Ⓔ
ld	r0, (r12)	. . .	Ⓕ
ld	r0, (r13)	. . .	Ⓖ

FIG.16

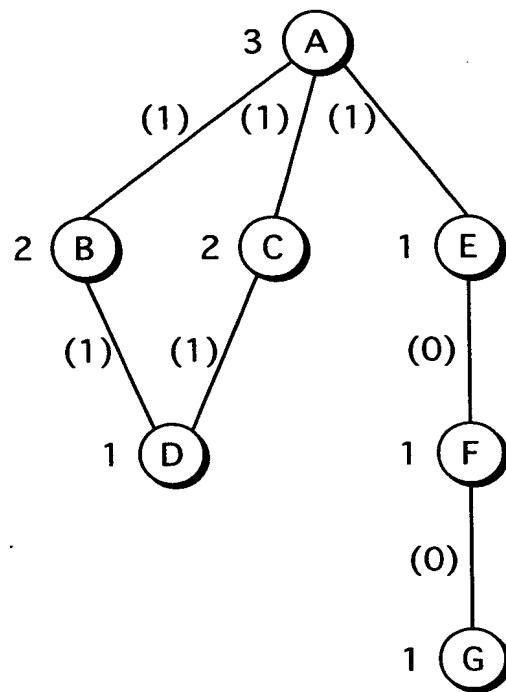


FIG.17

CLOCK CYCLE	INSTRUCTION 1	INSTRUCTION 2
1	ld r0, (r10) ··· ① (FIRST DECISION)	—
2	add r3, r0, r1 ··· ② (SECOND DECISION)	add r4, r0 r2 ··· ③ (THIRD DECISION)
3	or r5, r4, r3 ··· ④ (FOURTH DECISION)	st (r11), r0 ··· ⑤ (FIFTH DECISION)
4	ld r0, (r12) ··· ⑥ (SIXTH DECISION)	—
5	ld r0, (r13) ··· ⑦ (SEVENTH DECISION)	—